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IS 5103 (1969): Twist Drills, Morse Taper Shanks [PGD 32: Cutting tools]

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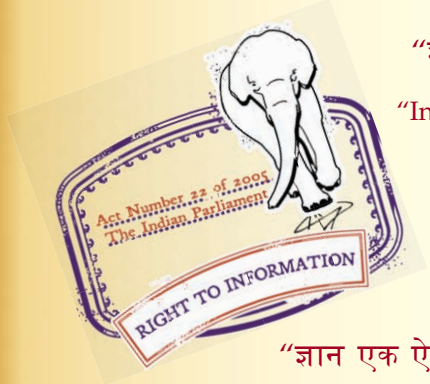

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS : 5103 - 1969
(Reaffirmed 1986)

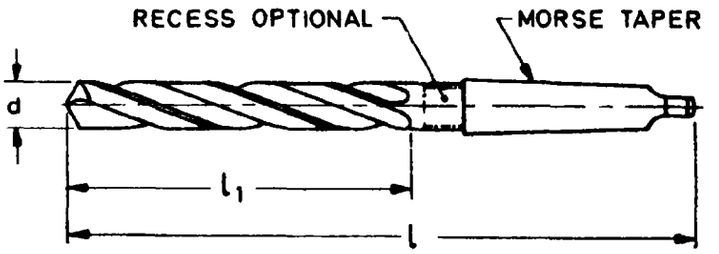
[Ref : Doc : EDC 45 (1398) F]
Small Tools Sectional Committee, EDC 45; Twist Drills, Reamers, Tapers, Sockets, Sleeves, Adapters Subcommittee EDC 45 : 1

Indian Standard

SPECIFICATION FOR TWIST DRILLS, MORSE TAPER SHANKS

1. Scope — Dimensions and requirements for twist drills with morse taper shanks.

2. Dimensions



All dimensions in millimetres.

d h8	Range of Diameters d		l_1	l	Morse Taper
	Over	Up to and including			
3·00	2·65	3·00	33	114	1
3·20	3·00	3·35	36	117	1
3·50	3·35	3·75	39	120	1
3·80 4·00 4·20	3·75	4·25	43	124	1
4·50	4·25	4·75	47	128	1
4·80 5·00 5·20	4·75	5·30	52	133	1
5·50 5·80 6·00	5·30	6·00	57	138	1
6·20 6·50	6·00	6·70	63	144	1
6·80 7·00 7·20 7·50	6·70	7·50	69	150	1
7·80 8·00 8·20 8·50	7·50	8·50	75	156	1
8·80 9·00 9·20 9·50	8·50	9·50	81	162	1
9·80 10·00 10·20 10·50	9·50	10·60	87	168	1
10·80 11·00 11·20 11·50 11·80	10·60	11·80	94	175	1
12·00 12·20 12·50 12·80 13·00 13·20	11·80	13·20	101	182	1
13·50 13·80 14·00	13·20	14·00	108	189	1
14·25 14·50 14·75 15·00	14·00	15·00	114	212	2
15·25 15·50 15·75 16·00	15·00	16·00	120	218	2
16·25 16·50 16·75 17·00	16·00	17·00	125	223	2
17·25 17·50 17·75 18·00	17·00	18·00	130	228	2
18·25 18·50 18·75 19·00	18·00	19·00	135	233	2

(Continued)

This standard conforms fully to ISO Recommendation R 235-1961.

Adopted 6 February 1969

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Gr 2

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

All dimensions in millimetres.

d h8	Range of Diameters d		l_1	l	Morse Taper
	Over	Up to and including			
19·25 19·50 19·75 20·00	19·00	20·00	140	238	2
20·25 20·50 20·75 21·00	20·00	21·20	145	243	2
21·25 21·50 21·75 22·00 22·25	21·20	22·40	150	248	2
22·50 22·75 23·00	22·40	23·02	155	253	2
23·25 23·50	23·02	23·60		276	3
23·75 24·00 24·25 24·50 24·75 25·00	23·60	25·00	160	281	3
25·25 25·50 25·75 26·00 26·25 26·50	25·00	26·50	165	286	3
26·75 27·00 27·25 27·50 27·75 28·00	26·50	28·00	170	291	3
28·25 28·50 28·75 29·00 29·25 29·50 29·75 30·00	28·00	30·00	175	296	3
30·25 30·50 30·75 31·00 31·25 31·50	30·00	31·50	180	301	3
31·75	31·50	31·75		306	3
32·00 32·50 33·00 33·50	31·75	33·50	185	334	4
34·00 34·50 35·00 35·50	33·50	35·50	190	339	4
36·00 36·50 37·00 37·50	35·50	37·50	195	344	4
38·00 38·50 39·00 39·50 40·00	37·50	40·00	200	349	4
40·50 41·00 41·50 42·00 42·50	40·00	42·50	205	354	4
43·00 43·50 44·00 44·50 45·00	42·50	45·00	210	359	4
45·50 46·00 46·50 47·00 47·50	45·00	47·50	215	364	4
48·00 48·50 49·00 49·50 50·00	47·50	50·00	220	369	4
50·50	50·00	50·80	225	374	4
51·00 52·00 53·00	50·80	53·00		412	5
54·00 55·00 56·00	53·00	56·00	230	417	5
57·00 58·00 59·00 60·00	56·00	60·00	235	422	5
61·00 62·00 63·00	60·00	63·00	240	427	5
64·00 65·00 66·00 67·00	63·00	67·00	245	432	5
68·00 69·00 70·00 71·00	67·00	71·00	250	437	5
72·00 73·00 74·00 75·00	71·00	75·00	255	442	5
76·00	75·00	76·20		447	5
77·00 78·00 79·00 80·00	76·20	80·00	260	514	6

(Continued)

AMENDMENT NO. 3 DECEMBER 1996
TO
IS 5103 : 1969 SPECIFICATION FOR TWIST DRILLS, MORSE TAPER SHANKS

(*Page* 3, *clause* **4**) — Insert the following notes at the end of clause 4

'NOTES

1 In case of range of diameters over 2.65 to 3.0 mm, the tolerance on 'l' and 'l$_1$' shall be ± 3 mm

2 In case of range of diameters over 100 to 106 mm, the tolerance on 'l' and 'l$_1$' shall be ± 5 mm.'

(*Page* 3, *clauses* **5.1**, **5.2**, **5.5** *and* **6**) — Substitute 'IS 5099 : 1983' *for* 'IS 5099 : 1969'

(PE 10)

Reprography Unit, BIS, New Delhi, India

All dimensions in millimetres.

d h8	Range of Diameters d		l_1	l	Morse Taper
	Over	Up to and including			
81·00 82·00 83·00 84·00 85·00	80·00	85·00	265	519	6
86·00 87·00 88·00 89 00 90·00	85·00	90·00	270	524	6
91·00 92·00 93·00 94 00 95·00	90·00	95·00	275	529	6
96·00 97·00 98·00 99·00 100·00	95·00	100·00	280	534	6
—	100·00	106·00	285	539	6

3. Designation

3.1 A morse taper shank twist drill with 9·00 mm diameter, of 'tool type' *N* for right-hand cutting, conforming to this standard and made from high speed steel (HS) shall be designated as:

Twist Drill 9·00 IS : 5103 HS.

3.2 When required with 'tool types' other than *N*, *H* or *S* should be added in the designation after the diameter as appropriate.

4. Tolerances — The flute length l_1 and overall length *l* may vary between the corresponding lengths specified for the preceding and the following ranges of diameters *d*. If the next larger or smaller overall length is associated with a different taper shank from that of the length under question, then the permissible upper or lower limit shall be that of the next larger or smaller overall length minus or plus the difference between the lengths of the taper shanks concerned.

Example:

The flute length l_1 for 14·00 mm diameter may vary between the values 101 and 114 mm from the specified value of 108 mm. The overall length *l* may vary between the values 182 and 197·5 mm (212 mm minus 14·5 mm) from the specified value of 189 mm.

5. General Requirements

5.1 'Tool type' unless otherwise specified : *N* according to IS : 5099-1969*.

5.2 The detailed dimensions of the point and cutting angles shall be at the discretion of the manufacturer (*see also* IS : 5099-1969* for recommendations regarding 'tool types').

5.3 The diameter *d* shall be measured as near the point as practicable.

5.4 The flute length, overall length and tolerances for intermediate diameter shall be selected from the relevant range of diameters.

5.5 Other requirements according to IS : 5099-1969*.

6. Tests — According to IS : 5099-1969*.

EXPLANATORY NOTE

This standard was based on ISO/R 235-1961 which has been reviewed by ISO and found technically suitable for transformation into ISO 235/I-1975. Recently this Indian Standard has also been reviewed and found to be technically identical with ISO 235/I-1975 'Parallel shank twist drills, jobber and stub series, morse taper shank twist drills and core drills' issued by the International Organization for Standardization.

*Technical supply conditions for twist drills.

Reprography Unit, BIS, New Delhi, India